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# Some Questions Answered in Regard to Pecan Trees

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*The beginner in pecan growing has many questions which he wants answered. Some of the most important of these are here briefly discussed. My pecan groves aggregating two hundred and fifty acres, and my nurseries of seventy acres, devoted exclusively to pecans, are always open to visitors. A visit to these will answer some of these questions.*

## EXPERIENCE: WHAT IT HAS TAUGHT.

**I**N December, 1886, I planted my first pecan nuts. I then knew nothing about them except what I had read. Thirty-seven years of mingled success and failure, of things done correctly and those done incorrectly, have brought valuable lessons that, had they been known in the beginning, would have been almost invaluable. Experience is the best teacher. Some things have been learned; and while much remains yet unknown, it is to guard others against like mistakes that this is sent out.

### WILL PECANS PAY?

This is the first question asked by those who want to set trees. I unhesitatingly answer, YES, provided the conditions necessary to success are complied with. In a general way these are: (a) Strong, vigorous trees properly handled, (b) set on good land, and (c) then well cared for. It is my deliberate conviction that in the long run a pound of pecans can be produced more cheaply than a pound of cotton. The few who are more skilled and patient will grow the former at the higher price; the unskilled masses will continue to make cotton at the lower price.

### CARE—PATIENCE.

With the proper exercise of care and patience, there are handsome profits in pecan growing. The field is more promising than any other in agriculture or horticulture, of which I have any knowledge; but if quick profits must be had, let pecans alone. If slipshod methods are to be followed, better raise cotton or corn or razor-back hogs.

To the person who is willing to exercise care in the selection and setting of trees, who will give them proper cultural attention, and who is willing to wait a few years for results, there is no more profitable investment than a grove of pecans.

### SOIL.

The pecan will thrive in almost any soil to be found in the Southern States on which cotton or corn can be successfully grown. It is at home on the alluvial soils of our river bottoms; and it flourishes on the high pine and hardwood lands of the hill sections. But while it grows well on land having a clay subsoil, it does not do well on deep sand. A fertile soil that will grow any cultivated crop will almost certainly produce pecans.

For the first two or three years the pecan grows rather slowly, its growth going rather to root than to top. After this, however, if properly cared for on good land, its

progress is rapid. I have trees twelve years old that are a foot in diameter, twelve inches from the ground. On the other hand, I know trees of this age, set in poor soil and never cared for, that are not six feet in height. No tree is more responsive to favorable condition of soil and culture, and none is more dwarfed by carelessness and neglect. Don't plant pecans and then neglect them; mining stock at \$1.00 per share would be a better investment than a neglected pecan orchard, because it occupies less space.

### TRANSPLANTING.

It is important to set trees as soon as possible after reaching destination.

If there is any delay in setting, wet the roots thoroughly and set the bundle(s) aside in a cool shady place.

Where more than one variety is shipped in a bundle, each variety is tied together by a cord around the upper part of the trees, a wooden label indicating each variety. Be careful not to cut these cords in opening the bundle, but only those completely encircling the package.

**DO NOT ALLOW THE ROOTS OF THE TREE TO BECOME DRY OR EXPOSED TO THE ATMOSPHERE FOR ANY LENGTH OF TIME, FROM THE TIME IT IS DUG UNTIL IT IS AGAIN SET IN THE GROUND.**

Dig a hole for the tree ample in size. Two or two and one-half feet deep will suffice. Cut off the lacerated ends of all roots. Leave the tap root two or three feet long. It is a mistake to say that a pecan tree will not bear if the tap root is cut; but don't cut off too much of it. Set the tree about the same depth that it stood in the nursery, or at least not more than two inches deeper.

Fill in the hole with top soil, **PACKING THE DIRT WELL AROUND THE ROOTS.** A peck of stable manure or some guano may to advantage be mixed with the soil as it is thrown in, being careful not to allow this manure in any quantity to come in contact with the roots.

If the soil is at all dry when the tree is transplanted, it is well to pour a bucket of water around the roots when the hole is nearly filled. Let this soak in, then fill up the hole completely.

When trees over six feet in height are set, it is a safe plan to cut back the top to within four feet of the ground. When this is done they usually live better than if the whole of the top remains, particularly if the spring following the transplanting be a dry one. This, however is not imperative.



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Should the spring following the transplanting be dry, or the tree backward in starting growth, make a cone-shaped cavity about the tree extending down to the roots, into which pour one or two buckets of water. When this has thoroughly soaked in, pull the dirt back around the tree.

## TIME TO TRANSPLANT.

The sooner trees are set after the leaves are shed in the fall, the better will be their prospects of living, and the more vigorous the growth the following year. December is probably the best time to transplant; January is almost as good. Later than March the first is not recommended. Trees should not be dug and transplanted before they are thoroughly dormant, which in the Southern pecan belt is rarely before the last of November or the first of December.

## CARE OF TREES AFTER SETTING.

Keep the trees well cultivated. Don't allow the ground about them to become covered with grass and weeds. Also keep the ground for several feet about them pulverized with plow or hoe.

Land on which pecans are growing can be made to yield paying crops (and should be made to do so), until the trees come into profitable bearing. It is not best to plant small grain among the trees except as a winter cover crop to be plowed under before tree growth starts in the spring; and don't allow any other crop to grow too near the trees.

After the trees are bearing well, land may be annually sown, in peas, velvet beans, or some other leguminous crop which improves the soil, adds humus to it, and makes the trees more vigorous. Keep the soil in a bearing orchard as nearly as possible covered all the time with a growing crop, which should be turned under to add humus. Where this element is plentiful and liberal fertilizing with guano is followed, a pecan orchard is rarely a failure. Where this is not done it is seldom a success.

## FERTILIZING.

The best fertilizing for pecans is to make rich the land on which they grow. Big crops of cotton or peas or potatoes or vegetables, grown on the land, will insure a satisfactory growth of trees; but special applications of manure or guano about the trees may be advantageous, PROVIDED FERTILIZERS ARE NOT PLACED TOO NEAR TO THEM, so as to cause a congestion of the roots in the fertilized area. Apply fertilizers well out from the body of the tree, and the roots will find them. As a general rule, any fertilizer that will make other crops grow will do likewise for pecans. Ammoniates should predominate in fertilizers for young trees; phosphoric acid and potash for trees that are in bearing. A 9-5-4 formula, or one approximating this, is good for a bearing grove.

## FRUITING.

How soon will trees bear? That depend on several factors:

(1) Some varieties bear earlier than others. Where well cared for, trees will begin bearing in from three to five years after transplanting; though five years is a reasonable time in which to expect fruit. Ten years after setting, when well cared for, trees should bear from fifteen to forty pounds of nuts each. Much better records

than this have been made where trees have had the best of attention.

(2) Seedlings may fruit in from six to eight years from the nut, or they may never bear. Few things are more uncertain than when or what a seedling pecan will produce, tree agents to the contrary notwithstanding.

(3) The age of profitable bearing depends entirely upon the attention given the trees. Even with best care the age of profitable bearing should not be expected in less than eight to ten years after an orchard is set.

## PRUNING.

Little pruning of the pecan is necessary. Some prefer to keep all twigs on newly-set pecan trees pinched off so as to force the new growth into the permanent head. Others allow branches to grow until the end of the second year, when the lower limbs are cut off up to where the permanent head is to begin. No great mistake will be made in following either plan. Permanent branches should be allowed to put out at from four to six feet from the ground. Low heading is best, only keeping sufficient space under the trees for plows to do their work. When it becomes necessary to cut off limbs of any size, it is best to cover the wounds with a thick application of paint, which should be renewed from time to time. This protects from decay until the wound heals over. A plant with coal tar as its base, and mixed with asbestos or some other filler to give it body, has been found best for this purpose. It is known in the trade as, "Asbestos Roofing Paint," and may be obtained of almost any dealer.

## SIZE OF CROPS.

With a proper selection of varieties and intelligent care given the trees, one may rest assured of a harvest in due time. At twenty years of age one hundred to one hundred and fifty pounds of nuts per tree is a reasonable expectation. Under the best conditions this is surpassed. Mr. K. Powell, ex-mayor of Cairo, has in his yard a tree which when fifteen years old from seed, bore one hundred and fifty pounds of nuts. When twenty-six years old he gathered five hundred pounds from this tree.

Mr. I. P. Delmas, Pascagoula, Miss., reported two hundred and thirty-five pounds of pecans as gathered in 1913 from a thirteen-year old Delmas tree.

But the size of crop borne by an individual tree is not a safe basis on which to estimate the crop that will be produced by a whole orchard. Suffice it to say that if one will care for his orchard in the best manner, he will in time be abundantly rewarded with fruitful harvests.

## OFF YEARS.

A full crop of nuts cannot be expected each year from pecans, nor from any other fruit tree unless it be the fig. Barring an occasional short crop caused by unfavorable seasons at the blooming time, a full crop may be counted on every other year, with one-half to two-thirds of a crop the intervening year. This is likely caused from exhaustion incident to yielding a heavy crop, and may be overcome, to some extent, by the liberal use of fertilizers and an abundance of water.

## HARVESTING.

The main harvest season is from October fifteenth to December the first. When mature, the burr surrounding the nut cracks open, and the nut falls to the ground, where it may be gathered up. Harvesting may be has-



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tened by shaking or thrashing off the nuts. One great advantage possessed by the pecan is that it may be harvested and marketed without the rush incident to ordinary fruit crops.

## OVERPRODUCTION.

Will not the market be overstocked when the trees now being planted come into bearing? I answer emphatically NO. The Southern States are practically the only commercial producers of these nuts. We have the world for a market and twelve months of the year in which to sell them. Furthermore, nuts and nut products are every year becoming more and more popular; and the finer varieties of the pecan are the best nuts that grow. There is a fair profit in growing pecans at ten to fifteen cents per pound, while the best varieties of nuts now sell at wholesale at from twenty to fifty cents per pound. It is only the small, inferior seedlings that bring from eight to twelve cents. Physicians and scientists are telling us that if we would eat more nuts and fruits and less meats, that we would be healthier and live longer. Under this stimulus the demand for nuts is more than keeping pace with the increasing supply. As prices diminish, which they will, nuts will gradually take their place as an article of diet as standard as potatoes or flour or beefsteak. The present price of nuts may be reduced one-half and still there will remain a good profit to the grower of pecans.

## ITS HARDINESS.

I have never known a pecan tree to be blown down by storms, except in the sandy lands of the coast section where they are unusually severe. Its root system is strong and deep. Sometimes the limbs are broken off by winds; but this does not occur more frequently than with the oak or the hickory.

Near Cairo there is a pecan tree probably seventy-five years old, which has three times been struck by lightning; but it still lives and bears its normal crops of nuts.

During all my experience I have never had trees damaged to any extent by frosts. Beginning to grow late in the spring, they run little risk from this source.

## ENEMIES.

The pecan has its enemies; else it would be an exception to every other tree and plant in the world. But these enemies are not more serious than those that confront the grower of the peach, the pear, the apple or the orange. Any fruit tree needs attention; and with this intelligently applied, no great harm will result.

The more serious of these pests are here given. But first let it be said that no scale insects have seriously affected the pecan.

**THE FALL WEB WORM.**—Remove and destroy these webs as they appear.

**THE GIRDLER.**—This insect cuts off the ends of the twigs in autumn. Gather up and burn the twigs, which contain the larvae of the girdler.

**THE BORER.**—It occasionally gets into the body of the tree. Cut out with knife; or inject a few drops of carbon bisulphide into its hole and stop up with wax.

**BUD WORMS,** case bearers, and the like sometimes give trouble. These may be controlled by spraying with some arsenate. If left alone they will take moderate toll. Nature's checks may be depended upon to hold them in reasonable bounds.

**SQUIRRELS.**—Use your gun, or surround the tree with a girdle of tin to prevent them from reaching the nuts.

**ROSETTE.**—This causes the twigs to die back in autumn. Some varieties are quite subject to rosette, while others appear to be almost or quite immune. Set immune varieties. Keep soil well supplied with humus and rosette will not bother much.

**SCAB.**—A serious pest particularly on seedling trees, and on an occasional named variety. Top work or cut down seedlings which scab badly; and avoid setting named varieties which are seriously affected. Any honest nurseryman will advise you what varieties to avoid. Better still, observe those varieties in your section which are seriously affected with rosette or scab, and avoid these when setting trees.

## REPRODUCING TRUE.

Will the pecan reproduce true from seed? Captain S. H. James, of Louisiana, who has one of the oldest bearing pecan orchards in the world, in discussing this subject at the New Orleans convention of the National Nut Growers' Association, said: "Absolutely no per cent will reproduce true from seed;" and growers of wide observation think he is about right. Here, too, the tree peddler dissents, and has wonderful stories to tell of how he makes his seedlings come true. Believe him if you like; but if you do, there are years of disappointment ahead of you.

The only possible way to get trees that will produce a specific variety is to set budded or grafted trees of the desired kind. Setting these, you can rest assured of the results. With seedlings you do not know what you will get, nor when you will get it. In rare cases a seedling tree will bear as good or even a better nut than the one from which it grew; but in almost every case it is inferior to the parent nut.

## INTER-CROPPING.

All pecan groves should have some crop growing among the trees. Among the best for this purpose are cotton, peas, velvet beans, soy beans, potatoes and truck crops. Corn is not bad; but small grain should be avoided. When trees are young no crop should be planted too near them, but a space of from three to six feet should be left around each tree, which space should be carefully cultivated with plows or hoes. When they are older they will take care of themselves so far as the distance of the crop is concerned. All crops growing among pecan trees should be highly fertilized. The trees will get their share of this.

## DISTANCE.

On good land (and no other should be used for pecans) the trees should be set not nearer than 50 feet apart, and 60 feet will prove better. In the end even a greater distance than the latter may be better.

## VARIETIES.

No one variety is best adapted to all sections; but among the multiplicity of varieties, a number will be found which will do well in any part of the pecan belt. A discussion of the different varieties is not here attempted. The best criterion by which to go, is to note those which are doing well in your own or in a similar section, and then set these. Most pecan nurserymen are able and willing to give valuable information on this subject. In the absence of reliable information, write to your State Experiment Station for advice.

## THE PECAN AREA.

In a general way pecans may be more or less success-



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fully grown in any part of the cotton belt. Probably the best of the pecan territory lies within 200 miles of the coast, beginning with North Carolina and extending along the coast to the Rio Grande. Within this territory pecans are thoroughly at home. Farther north there are varieties originating in Kentucky and Indiana which do well. For the best results these latter should be propagated on northern grown stocks.

## TOP WORKING.

Seedlings and named varieties which do not prove successful may be top worked to better varieties. It is an easy matter to top work a tree which is a few inches in diameter; and those from one to two feet in diameter may be worked with no great difficulty; but every precaution should be taken to prevent the entrance of decay into the heart of the tree. This work may be done either by budding or grafting. The trees should be bearing the improved nuts in three years after this work is done. It requires a skilled hand to successfully do this work; and the price ranges from \$2.00 to \$10.00 per tree, owing to the size. Many of the wild pecan trees of the west are being top-worked with better varieties.

## MIXING VARIETIES.

Theoretically it is better to mix varieties in a pecan orchard than to have trees all of the same kind, the advantage being in the cross pollination which will result. A real advantage comes from having several varieties, in that as some varieties bear better one year and others the following year, a more uniform crop will be secured by mixing them. At least three or four varieties are recommended for orchards of any size. In harvesting each variety should be gathered separately.

## PECANS AS ORNAMENTALS.

The value of the pecan as an ornamental tree is just coming to be recognized. It is as shapely and stately as the oak, and not liable to be blown down. Its great advantages are that to beauty it adds utility, being the source of a regular and constantly increasing income. Everyone who has visited Monticello, Fla., has likely been impressed with the beauty and stateliness of the pecan trees found in almost every yard and garden in the town.

## AS FENCE POSTS.

As our forests are becoming depleted, there is a growing demand for fence posts. A living post is better than a dead one. The pecan has been suggested as a most desirable tree for this purpose. Set thirty feet apart, with a stay between each, they ought to prove entirely satisfactory as posts for woven wire fencing. This distance is not too near to prevent fair results in fruiting when there is plenty of lateral room.

## ONE TREE.

As an example of the growth made by a tree under favorable conditions, I give the figures of a budded "Frotscher" pecan tree which stands on my lot in Cairo, and which has been seen and admired by many. The tree was purchased from William Nelson, New Orleans, in January, 1892. It was about three feet high when set and cost \$2.00.

The first column gives the circumference of this tree in inches, three feet from the ground, at the end of the year indicated. The second column gives the weight of the nuts produced each year. No measurements of the tree were made until December, 1894.

	Circumference.	Nuts in pound
1894	8½ inches	
1895	12¼ "	
1896	14½ "	1 nut.
1897	20 "	7 lbs.
1898	25 "	10½ "
1899	29¼ "	13½ "
1900	33¼ "	27 "
1901	37¼ "	16 "
1902	40¼ "	45 "
1903	44 "	80 "
1904	46¾ "	121 "
1905	50 "	131 "
1906	53 "	96 "
1907	56 "	30 "
1908	59½ "	169 "
1909	62 "	352 "
1910	65 "	196 "
1911	66 "	306 "
1912	68 "	196 "
1913	71 "	344 "
1914	72 "	145 "
1915	74 "	162 "
1916	76 "	200 "
1917	78 "	304 "
1918	80 "	318 "
1919	83 "	426 "
1920	84 "	76 "
1921	85 "	272 "
1922	86 "	264 "
1923	88 "	404 "
1924	89	101

Since it began bearing, this tree has been severely cut for budding wood; and hence its bearing has to some extent been retarded.

## MUCH YET TO LEARN.

Much yet remains to be learned in regard to the pecan industry, which is still in its infancy. The National Pecan Growers' Association, which is composed of most of the larger pecan growers of the South, is doing much to give valuable information on the various questions about which we are yet in comparative ignorance. Its annual conventions are well worth attending. Enough about the industry, however, is already known to make it certain that one who engages in it intelligently, and who cares for his orchard as he does for any other successful business, will be abundantly rewarded. The Department of Agriculture at Washington is giving some valuable assistance to the industry, on the line of diseases, insects, fertilizers and the like. When in doubt about diseases or anything else, it is suggested that one write to the Bureau of Plant Industry at Washington, D. C., for information. The Department has several men who devote all their time to the pecan industry.

## CAUTION—ADVICE.

(1) This caution is timely for some: DON'T SET MORE TREES THAN YOU CAN CARE FOR IN THE VERY BEST MANNER.

(2) I close with the advice that thirty-seven years ago, started me in the pecan business: "Young man, plant a pecan grove; when you are old it will support you." I thought the advice good then; I know now that it is sound.